



**RE: Illinois CAFO program report**  
**Sofat, Sanjay** to: Julianne Socha, Stephen Jann

11/02/2012 11:53 AM

History:

This message has been replied to.

Julianne and Steve,

Once again thanks for your help with the frozen ground issue. So that you know we are filing our response to Board's questions on November 7th. If you have any position/comments on "appeal rights" issue(item 4 of the Producers' filing), please let us know before 11.07.2012. Once again thanks for your help.

Sanjay K. Sofat  
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From: Socha.Julianne@epamail.epa.gov [  
mailto:Socha.Julianne@epamail.epa.gov]  
Sent: Thursday, November 01, 2012 3:33 PM  
To: Sofat, Sanjay  
Subject: Fw: Illinois CAFO program report

Sanjay,  
In follow up to the information I sent you on 10-26-12 and your discussions on 10-29 with Steve Jann I'm forwarding some additional information regarding runoff from frozen ground.  
julianne

1.) I looked through documents Steve Jann has relating to Wisconsin's CAFO rule, although I have not found data specific to your question there is some general discussions regarding positive benefits associated with restrictions for winter land application. I've provided links to electronic copies and noted the sections discussing winter land application that may offer some general support for Illinois EPA's definition.

<http://dnr.wi.gov/topic/AgBusiness/documents/AdoptionNR243EA.pdf>

see Section VII.A, C.1., and 5

<http://dnr.wi.gov/topic/AgBusiness/documents/AdoptionResponseComments.pdf>

see comment & response to comment for comment numbers 33-35, 85, 88, 89, 90, 93, 97 and 125

2. )

[http://publications.usace.army.mil/publications/eng-manuals/EM\\_1110-2-1406\\_sec/toc.htm](http://publications.usace.army.mil/publications/eng-manuals/EM_1110-2-1406_sec/toc.htm)

ACOE Engineering Manuals

Publication Number: EM 1110-2-1406

Title: Engineering and Design - Runoff from Snowmelt

Proponent: CECW-EH

Publication Date: 31 March 1998

see chapters 2 and 7

3. ) another article that Steve Jann has noted as a possible source is Granger, R.J., Gray, D.M., and Dyck, G.E. 1984. Snowmelt infiltration to frozen prairie soils, Can. J. Earth Sci. 21:699-677  
this is the abstract for the article, I have not been able to obtain a copy of the full journal article

<http://www.nrcresearchpress.com/doi/abs/10.1139/e84-073>

4.) the attached file is an excerpt from Region 5's response to peer review comments on the draft Winter Spreading Technical guidance that Steve wrote and is included in the NPDES Permit Writers' Manual for CAFOs as Appendix G. This excerpt includes references that Illinois EPA may find useful. see the second full paragraph on the first page and References on pages 3 and 4 of the attached file.

(See attached file: excerpt R5 response to peer review comments on draft winter spreading guidance.pdf)

Both 5.) and 6.) below are documents that Steve Jann recommended

5.) Srinivasan, M.S., Bryant, R.B., Callahan, M.P., Weld, J.L. 2006. Manure Management and nutrient loss under winter conditions: A literature review, Journal of Soil and Water Conservation 61/4: 200-209

(See attached file: manure management and nutrient loss under winter conditions a literature review 2006.pdf)

6.) [http://vermont4evolution.files.wordpress.com/2011/12/ulm-elc\\_coldclimates.pdf](http://vermont4evolution.files.wordpress.com/2011/12/ulm-elc_coldclimates.pdf)

Stormwater BMP Design Supplement for Cold Climates, December 1997

7.) Ohio EPA conducted runoff studies in the early to mid-2000's, mostly related to thaw conditions. The data I've seen includes significant information on pollutants in runoff and ambient water quality data from nearby streams showing increased concentrations of pollutants after manure application. I did not see any data specific to depth of frozen ground however, you may want to contact Ohio EPA to see if this data is available. Rick Wilson and Cathy Alexander at Ohio EPA were the contacts for these projects. The attached summary report provides some summary data from the Ohio studies. See pages 2-6

(See attached file: Effect of Manure land application on surface

water quality in region 5 september 2005.pdf)

----- Forwarded by Julianne Socha/R5/USEPA/US on 11/01/2012 11:36 AM -----

From: Julianne Socha/R5/USEPA/US  
To: "Sofat, Sanjay" <[Sanjay.Sofat@Illinois.gov](mailto:Sanjay.Sofat@Illinois.gov)>,  
Date: 10/26/2012 11:14 AM  
Subject: RE: Illinois CAFO program report

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Hi Sanjay,

Here's what I've been able to find so far. According to WDNR, Wisconsin NR 243 definition of frozen ground was both a practical consideration and one based on risk associated with a temporary frozen soil condition, typically associated with an overnight frost. The technical advisory committee working on the revisions to NR 243 decided that a ½ inch was deemed to be a low-risk condition, whereby spreading equipment could get out on land and minimize soil compaction (a good thing) while the application of the manure and/or warming daytime temperatures would rapidly remove the frozen condition and minimize the potential for runoff. Beyond the ½ inch, the frozen condition was believed to be more permanent and couldn't be rapidly dissipated, or was indicative of more permanent frozen conditions.

UW-Discovery Farms' work regarding concrete frost also provides support for a higher risk of runoff associated with frozen conditions at lesser soil depths from the surface. Here's a link to UW-Discovery Farms.  
<http://fyi.uwex.edu/discoveryfarms/2012/01/concrete-frost-formation-and-implications/>

Illinois EPA may want to contact Tom Bauman at WDNR or Discovery Farms directly to find out if they have available data that could be shared with Illinois EPA.

If I find any additional information I'll forward it to you.

julianne

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▼ "Sofat, Sanjay" ---10/19/2012 03:03:44 PM---Julianne- I was wondering if you could help me with this issue. Do you have access to data/research

From: "Sofat, Sanjay" <[Sanjay.Sofat@Illinois.gov](mailto:Sanjay.Sofat@Illinois.gov)>  
To: Julianne Socha/R5/USEPA/US@EPA,  
Date: 10/19/2012 03:03 PM  
Subject: RE: Illinois CAFO program report

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Julianne- I was wondering if you could help me with this issue. Do you have access to data/research that would show that runoff potential from ½ inch frozen ground would be far less than 2 inches of frozen ground? Thanks,

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From: [Socha.Julianne@epamail.epa.gov](mailto:Socha.Julianne@epamail.epa.gov) [<mailto:Socha.Julianne@epamail.epa.gov>]  
Sent: Friday, October 19, 2012 12:44 PM  
To: Willhite, Marcia  
Cc: Sofat, Sanjay  
Subject: Re: Illinois CAFO program report

yes, there will still be a progress report and a public informational meeting however, it is no longer being planned to coincide with the public hearing on the NPDES permit for surface discharging private sewage disposal systems.

As soon as details regarding the public informational meeting are available I will share them with you.

▼ "Willhite, Marcia" ---10/19/2012 12:39:43 PM---There was mention over the past year of doing a public meeting on the Illinois CAFO program to coinc

From: "Willhite, Marcia" <[Marcia.Willhite@Illinois.gov](mailto:Marcia.Willhite@Illinois.gov)>  
To: Julianne Socha/R5/USEPA/US@EPA,  
Cc: "Sofat, Sanjay" <[Sanjay.Sofat@Illinois.gov](mailto:Sanjay.Sofat@Illinois.gov)>  
Date: 10/19/2012 12:39 PM  
Subject: Illinois CAFO program report

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There was mention over the past year of doing a public meeting on the Illinois

CAFO program to coincide with the public hearing on the NPDES permit for surface discharging private sewage disposal systems (scheduled for Nov. 1). Is that still the plan?

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